Harsh Pareek

CS PhD student graduating May 2017(exp)

CONTACT INFORMATION:

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RESEARCH STATEMENT

My research interests lean on the theory side of the theory-practice spectrum. During my PhD, my focus has been on axiomatic foundations for Ranking and human-in-the-loop learning.
I have broad expertise in the following research areas: Large Scale Optimization and Learning, Graphical Models, Network Analysis, Time Series Analysis and NLP

PUBLICATIONS

- *Distributional Rank Aggregation, and an Axiomatic Analysis* A. Prasad*, H. Pareek*, P. Ravikumar. ICML 2015

- *Tracking with ranked signals* Tianyang Li, Harsh Pareek, Pradeep Ravikumar, Dhruv Balwada, Kevin Speer. UAI 2015. (selected for plenary presentation)

- *A Representation Theory for Ranking Functions.* H. Pareek, P. Ravikumar. NIPS 2014

- *Human Boosting.* H. Pareek, P. Ravikumar. ICML 2013

ACADEMIC BACKGROUND:

- **University of Texas at Austin**   2011 - Spring 2017(*expected*)
  Computer Science PhD Program   **GPA: 4.0/4.0**
  Advisor: **Prof. Pradeep Ravikumar**, Statistical Machine Learning Group

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- **Indian Institute of Technology - Bombay (IITB), India**   2007-2011
  B.Tech(Equivalent to BSCS) **Computer Science with Honours**   **CPI: 9.58/10**
  with Minor in Electrical Engineering
  Relevant Coursework: Graduate-level courses on Machine Learning, Web Mining, Convex Optimization and NLP.

RESEARCH AND WORK EXPERIENCE:

Incentives in crowdsourcing   *June-July 2011*
Microsoft Research, Seattle, WA   *Research Intern, Machine Learning Group*

- Investigated an axiomatic framework for incentivizing workers in crowdsourcing along the lines of Dr. Zhou's Double or Nothing paper.

Time Series Analysis for eBay transaction data   *Summer 2013*
eBay Research Labs   *PhD Intern, Data Science Team*

- Performed time series analysis on eBay's historical transaction data using Big Data technologies (Hadoop, MapReduce etc)

Transfer Learning Across Multilingual Corpora   *June-July 2011*
Microsoft Research, Bangalore, India   *Research Intern, Multilingual Systems Group*
- Explored transfer learning of text classifiers across languages to leverage availability of large unlabelled comparable corpora. This allows using small amounts of labelled data in one language to create and improve classifiers for other languages

Senior Thesis: Entity Search and Ranking   *July 2010-May 2011*
Guide: Prof. Soumen Chakrabarti, IIT Bombay   *Intelligent Internet Systems Group*
- Proposed RankSVM-based algorithms for ranking Wikipedia entities using bag of words and proximity based features from text and Random Walk models for entity list completion. Implemented a proof of concept system using Semantic Web technologies

Research Internship: Complete Functional Synthesis   *May-July 2010*
Guide: Prof. V. Kuncak, EPFL, CH   *Lab for Automated Reasoning and Analysis*
- Applied methods from Algebraic Geometry and Convex Analysis to design algorithms for program synthesis from specifications, in particular for programs involving linear integer and rational arithmetic formulae

Honours and Awards:

- **MCD Fellowship** awardee. Member of **Phi Kappa Phi**
- *Human Boosting* was included in 50 best ideas in UTCS, on the 50th anniversary of the Computer Science department

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- **All India Rank 8** in IIT-JEE 2007 among over 500,000 applicants
- **Silver** Medallist at the 38th **International Physics Olympiad 2007** in Isfahan, Iran
- 4th position in online contest and 7th in Onsite in **ACM ICPC** Regionals 2009
- Ranked **2nd** in Task 2 (among undergraduates) in the **International Predictive Analytics competition** (UC San Diego Data Mining Competition 2010 sponsored by FICO)

- Recipient of the prestigious **Aditya Birla Group Fellowship** 2007-2011
- Awarded **Gold Medal** in Indian National Physics Olympiad. Indian National Chemistry Olympiad and Indian National Mathematics Olympiad
- Awarded **NTSE Scholarship** (National Talent Search Examination) in 2005
- Ranked 12th in the State Merit List in SSC Examination (10th Grade) 2005

Service:

Reviewer for AIStats 2016

Other Activities:

Participated in startup accelerator **3 Day Startup - Austin** in October 2011

Coordinating TA for CS101, IIT Bombay   *July 2010 - December 2010*
One of 4 Coordinating TAs for the team of 92 TAs for 550 freshmen

Overall Coordinator for the Science Club of IIT-Bombay   *July 2009 - April 2010*
Led a team of 17 students to manage 6 technical clubs

Technical Skills:

R, Matlab, Python, C/C++, Java, Weka, Mechanical Turk, Hadoop, Galois